

USEPA/USACE/SMWG/US NAVY and the S-SW HSRC Present:

An Intensive 3-Day Workshop on

Sediment Stability

January 22-24, 2002

Chateau Sonesta

New Orleans, LA

OBJECTIVE OF WORKSHOP

A comprehensive understanding of contaminant exposure is critical when evaluating sediment management options for a specific site. Physical movement of contaminated bottom sediments potentially poses a significant factor in the decision-making process. Therefore, understanding the processes that control sediment stability is critical to conducting a credible alternatives analysis. The objective of this workshop is to inform industry, regulators, consultants and academia who are concerned about physical sediment stability issues on the following: (1) factors controlling sediment stability; (2) state-of-the-science regarding sediment stability, i.e., what is known about sediment stability?; (3) how sediment stability problems can be analyzed using scientific techniques, i.e., demonstrate what has been done at various sites; and (4) application of the scientific method to sediment stability problems, including data analysis, modeling, and uncertainty analysis. This workshop will provide an in-depth and detailed review and dialogue on key sediment stability issues.

Please note that this Workshop will cover the detailed scientific and technical aspects of sediment stability and is not intended to cover policy issues. Although this Workshop includes discussion of simple and complex “models,” it is not a “modeling” workshop. Rather, this Workshop covers all aspects of evaluation of physical sediment stability, especially as it relates to the important role this factor plays in evaluating the effectiveness of the sediment management options under consideration at contaminated sediment sites, including assessment tools and evaluation, the role of empirical evidence in evaluating sediment stability, and much more.

WHO SHOULD ATTEND

Persons working on or expecting to work on sediment sites will greatly benefit from this in-depth review and dialogue on sediment stability. Those who should consider attending include: remedial project managers, risk assessors, those involved in sediment remedy evaluation and remedy selection, regulatory management personnel, contractors assisting regulators or the regulated community in evaluating sediment sites, academia, industry, environmental groups, and any other stakeholders involved in sediment sites.

The co-sponsors include: the United States Environmental Protection Agency, the United States Army Corps of Engineers, the Sediment Management Work Group, the United States Navy and the South/Southwest Hazardous Substances Research Center.

WORKSHOP FORMAT

Important technical areas in each of the four major topics will be addressed by the panelists through a combination of short, informal presentations and discussion. Detailed panel discussion will be followed by a substantial opportunity for questions from and dialogue with the audience. The objective of the panel presentations and discussions is to identify areas of consensus on answers to two or three specific questions that are pertinent to each of the four major topics and to engage in consensus-building dialogue on the remaining topics/questions, if any. These questions will be discussed and answered, including dialogue between the panelists and the Workshop attendees during each segment, followed by a brief wrap-up for each of the four major topics entitled "Panelist Observation and Q&A." The Workshop will culminate on the final day with a two-hour, interactive summary session that will serve to identify issues of consensus and topics requiring further discussion and/or research.

If you have any questions relating to any of the subjects covered by the Workshop which you would like to see answered, please send them to smv@honigman.com and they will be passed along to the appropriate panelist(s) for advance consideration.

REGISTRATION/ACCOMMODATIONS

The Registration Fee is \$150 per person. The Registration Fee includes three continental breakfasts and three lunches during the course of the conference, break refreshments and an evening reception on January 22 with a cash bar. Seating is limited, please reserve early in order to ensure your participation. The Registration Deadline is January 4, 2002. Late Registration will be accepted after January 4th, if space is available, upon payment of a late fee of \$25.00.

Please return the attached Registration Form and Registration Fee, payable to the "Sediment Management Work Group" to:

Steven C. Nadeau
Sediment Management Work Group
c/o HMSC
2290 First National Building
660 Woodward Avenue
Detroit, MI 48226-3583

A limited bank of rooms with discounted rates has been reserved in the name of the "Sediment Stability Workshop" for \$116 per day, single occupancy, plus tax, for the nights of January 21-23, 2002. Please note that this rate is well below the applicable "government rate." Room reservations should be made directly with the Chateau Sonesta, at 504/586-0800. You should identify yourself as attending the "Sediment Stability Workshop." The room block will be reserved on a first-come, first-served basis until January 4, 2002. Please note that a very large conference is taking place the week of the Workshop and hotel rooms will be difficult to find and expensive. Early reservations are recommended. Check-in time is 3 p.m. and check-out time is noon. A one night's deposit is required to guarantee reservations. "No-shows" for guaranteed reservations will be charged one night's lodging. Cancellations with a full refund may be made up to 72 hours before your arrival date.

WORKSHOP AGENDA

Tuesday, January 22

Plenary Session

9:15 – 12:00

Welcome and Opening Remarks

9:15-9:25

One or more of the co-sponsors:

USEPA, USACE, U.S. Navy,

S/SW HSRC and the SMWG

Perspectives on Sediment Stability Issue – An Overview

9:25-9:45

W. Frank Bohlen (UConn)

Perspectives on Sediment Stability Issue – Panel Discussion

9:45-10:25

Panelists: USEPA

USACE

NOAA

SMWG

State Perspective (WDNR)

Break

10:25-10:40

Geomorphologic Issues

10:40-11:10

Lawson Smith (USACE)

Topics and Questions to be Addressed

11:10-11:30

Joseph Z. Gailani (USACE)

- Are deep mixing and deep erosion *ipso facto* consequences of common high-energy events in natural water systems?
- How does one evaluate the extent of mixing and erosion that has occurred at a site?
- Is it feasible to accurately predict the likelihood and frequency that disturbance and erosion would progress to some depth-of-concern within the sediment column at a contaminated sediment site?
- Is it feasible to develop guidance for the routine evaluation of the disturbance and erosion of sediments likely to occur in particular environments?

Chemical Stability Overview

11:30-12:00

Mark Dortch (USACE)

Lunch

12:00 – 1:00

Workshop Objectives and Procedures: <i>C. Kirk Ziegler (QEA)</i>	1:00 – 1:15
<i>Topic 1: Factors Controlling Sediment Stability</i> Overview of topics & questions <i>Joseph Z. Gailani, group leader (10 Minutes)</i>	1:15 – 3:00
<u><i>Panel Discussion and Dialogue: Topic 1/Session A:</i></u> Relative importance of processes controlling bottom shear stress Resuspension processes	
<i>Observer Comment/Question & Answer Period</i>	3:00 – 3:15
<i>Break</i>	3:15 – 3:30
<i>Topic 1: Factors Controlling Sediment Stability</i>	3:30 – 5:00
<u><i>Panel Discussion and Dialogue: Topic 1/Session B:</i></u> Bed armoring processes Deposition processes Biological effects	
<i>Observer Comment/Question & Answer Period</i>	5:00 – 5:15
<i>Topic 1: Consensus on Questions</i>	5:15 – 5:45
<ul style="list-style-type: none"> • What are the primary scour-inducing factors or processes that affect sediment stability? • Can site-specific resuspension parameters be measured with sufficient accuracy to provide accurate predictions of sediment stability? • What primary processes need to be considered when evaluating sediment stability? 	
<i>Panelists:</i>	
<ul style="list-style-type: none"> • <i>W. Frank Bohlen (UConn)</i> • <i>Richard A. Jepsen (Sandia National Laboratory)</i> • <i>Wilbert Lick (UCSB)</i> • <i>Ashish J. Mehta (Univ. of Florida)</i> • <i>Trimbak Parchure (USACE)</i> 	
<i>Welcoming Reception</i>	6:00 – 7:30

Wednesday, January 23

<i>Topic 2: Empirical Methods to Evaluate Stability</i> Overview of topics & question <i>John P. Connolly, group leader (10 Minutes)</i>	8:00 – 9:45
<u><i>Panel Discussion and Dialogue: Topic 2/Session A:</i></u> Utility of empirical analyses Bathymetric analysis Geochronologic analysis Geomorphologic analysis	
<i>Observer Comment/Question & Answer Period</i>	9:45 – 10:00
<i>Break</i>	10:00 – 10:15
<i>Topic 2: Empirical Methods to Evaluate Stability</i>	10:15 – 11:45
<u><i>Panel Discussion and Dialogue: Topic 2/Session B:</i></u> Contaminant bed concentration analysis Contaminant water column concentration analysis Sediment & contaminant mass balance during floods	
<i>Observer Comment/Question & Answer Period</i>	11:45 – 11:55
<i>Topic 2: Consensus on Questions</i>	11:55 – 12:15
<ul style="list-style-type: none">• What is the relative value of various empirical methods for evaluating sediment stability?• How can empirical analyses for evaluating sediment stability be conducted to produce reliable results?	
<i>Panelists</i> <ul style="list-style-type: none">• <i>W. Frank Bohlen (UConn)</i>• <i>David A. Cacchione (Woods Hole Group)</i>• <i>James Martin (Mississippi State Univ.)</i>• <i>Lawson Smith (USACE)</i>• <i>Rob Nairn (Baird and Associates)</i>	
<i>Lunch</i>	12:15 – 1:15

Topic 3: Experience at Field Sites 1:15 – 3:00
Overview of topics & questions:
C. Kirk Ziegler, group leader (10 Minutes)

Panel Discussion and Dialogue: Topic 3/Session A:

Upper Hudson River
Lower Fox River
Buffalo River
Capping Sites

Observer Comment/Question & Answer Period 3:00 – 3:15

Break 3:15 – 3:30

Topic 3: Experience at Field Sites 3:30 – 5:00

Panel Discussion and Dialogue: Topic 3/Session B:

Upper Mississippi River (1993 flood)
Lavaca Bay
Hurricane Floyd (North Carolina)
Florida hurricanes

Observer Comment/Question & Answer Period 5:00 – 5:10

Topic 3: Consensus on Questions 5:10 – 5:30

- Do high-energy events always have a major impact on sediment stability?
- Do the case studies reviewed here demonstrate that the impacts of high-energy events can be accurately evaluated using empirical and modeling analyses?

Panelists

- *David A. Cacchione (Woods Hole Group)*
- *Joseph Z. Gailani (USACE)*
- *Damian Shea (NC State Univ.)*
- *Allen Teeter (USACE)*
- *Harold R. Wanless (Univ. of Miami)*

Thursday, January 24

<i>Topic 4: Accuracy of Models Used to Predict Stability</i> Overview of topics & questions: <i>Doug Endicott, group leader (10 Minutes)</i>	8:00 – 9:45
<u><i>Panel Discussion and Dialogue: Topic 4/Session A:</i></u> Utility of models Data requirements for developing a credible model Site-specific accuracy requirements Available models & model reliability	
<i>Observer Comment/Question & Answer Period</i>	9:45 – 10:00
<i>Break</i>	10:00 – 10:15
<i>Topic 4: Accuracy of Models Used to Predict Stability</i>	10:15 – 11:45
<u><i>Panel Discussion and Dialogue: Topic 4/Session B:</i></u> Model resolution appropriate for project goals Extrapolation from calibration/validation storms to rare storms Uncertainty & sensitivity analysis Monitoring and model validation	
<i>Observer Comment/Question & Answer Period</i>	11:45 – 11:55
<i>Topic 4: Consensus on Questions</i>	11:55 – 12:15
<ul style="list-style-type: none">• Can models be used to accurately evaluate sediment stability?• What primary factors are required for developing a reliable model?	
<i>Panelists</i> <ul style="list-style-type: none">• <i>Keith Bedford (Ohio State Univ.)</i>• <i>John P. Connolly (QEA)</i>• <i>Earl Hayter (USEPA)</i>• <i>Wilbert Lick (UCSB)</i>• <i>C. Kirk Ziegler (QEA)</i>	
<i>Lunch</i>	12:15 – 1:15

The Panel will discuss and attempt to reach consensus on the four general questions posed during the plenary session

- Are deep mixing and deep erosion *ipso facto* consequences of common high-energy events in natural water systems?
- How does one evaluate the extent of mixing and erosion that has occurred at a site?
- Is it feasible to accurately predict the likelihood and frequency that disturbance and erosion would progress to some depth-of-concern within the sediment column at a contaminated sediment site?
- Is it feasible to develop guidance for the routine evaluation of the disturbance and erosion of sediments likely to occur in particular environments?

The Panel will make recommendations for post-workshop documentation.

Moderator:

Danny Reible (LSU, HSRC)

Panelists:

- *W. Frank Bohlen (UConn)*
- *John P. Connolly (QEA)*
- *Doug Endicott (GLEC)*
- *Joseph Z. Gailani (USACE)*
- *Wilbert Lick (UCSB)*
- *Ashish J. Mehta (Univ. of Florida)*
- *Trimbak Parchure (USACE)*
- *C. Kirk Ziegler (QEA)*

Observer Comment/Question & Answer Period

3:15 – 3:30

Closing Remarks: one or more of the co-sponsors:

USEPA, USACE, SMWG, U.S. NAVY and S/SW HSRC

PANELIST BIOGRAPHIES

Keith Bedford
Ohio State University

Keith Bedford is Professor and Chairperson in the Department of Civil and Environmental Engineering at Ohio State University. He received his Ph.D. from Cornell University. Dr. Bedford's research interests span a range of topics involving environmental fluid dynamics, including: coastal engineering; sediment and pollution transport analysis; computational fluid dynamics and transport phenomena; shore erosion and protection; data acquisition and measurement systems for pollution monitoring; and data signal analysis and processing.

W. Frank Bohlen
University of Connecticut

W. Frank Bohlen is a physical oceanographer and Professor in the Department of Marine Sciences at the University of Connecticut in Groton, Connecticut. Dr. Bohlen's primary research interests include the dynamics of sediment transport in estuarine and coastal waters, numerical modeling of transport processes, and instrument system design for long-term time series observations. Over the past thirty years he has conducted a variety of field and laboratory investigations dealing with the processes governing sediment transport with particular emphasis on the effects of storms and similar high energy aperiodic events, both natural and man-induced. These studies have included evaluations of fine-grained sediment transport in coastal, estuarine and lacustrine waters, wetland sedimentation and viability, processes affecting the infilling of navigational channels, port designs to minimize sedimentation and the associated maintenance, resuspension induced by mechanical dredging and dredged material disposal, the dispersion of drilling muds, and a variety of studies dealing with the transport of sediment associated contaminants. The results of these investigations have been used by federal, state and private groups and organizations involved in the use and management of coastal resources.

David A. Cacchione
Woods Hole Group, Inc.

David Cacchione is a Senior Scientist at the Woods Hole Group. He received his Ph.D. in oceanography from MIT and Woods Hole Oceanographic Institute in 1970. Dr. Cacchione has more than 25 years experience in the fields of oceanography and geology. He worked for the U.S. Geological Survey for over 23 years. His fields of expertise include: sediment dynamics, coastal oceanographic processes, sediment and contaminant transport, erosion, currents and waves, bottom boundary layer dynamics, and ocean instrumentation. Dr. Cacchione has extensive experience in organizing and leading multi-disciplinary field programs, analysis of oceanographic and marine geological data, and modeling coastal processes and sediment transport. He has co-authored more than 80 peer-reviewed papers on topics involving coastal erosion and marine sediment transport. Dr. Cacchione has managed coastal and marine scientific programs involving over 125 scientists and support staff, 2 deep-sea research vessels, and several large analytical laboratories. He is the recipient of Navy Professional Achievement Medal and Meritorious Service Award from U.S. Department of Interior.

John P. Connolly
Quantitative Environmental Analysis, LLC

John P. Connolly, Ph.D. is president of QEA. He directs the firm's environmental programs and has extensive technical and management experience resulting from a diverse background that includes employment with government, universities, and consulting. John has worked on more than 25 projects in contaminant transport and bioaccumulation. These studies have involved field sampling, fine-grained sediment transport analysis, chemical fate modeling and food web bioaccumulation modeling. They have generally been directed to exposure assessment and risk assessment problems related to surface water and groundwater contamination problems. John also has considerable experience in the areas of ecosystem processes and ecotoxicology. His work in these areas has focused on modeling of population dynamics, the cycling of carbon and nutrients and the relationship between contaminant exposure and toxic effects. John is frequently invited to participate in government and industry sponsored workshops and has presented several keynote talks. He has worked throughout the U.S., in Latin America, and in Europe. He has served as an expert witness for industry and government agencies and recently testified before the New York State Assembly. John received his Ph.D. from the University of Texas at Austin where he assisted USEPA in developing mathematical models of microcosms used to study the degradability of pesticides. Upon completion of his doctorate, he was employed by Manhattan College where he advanced to the rank of full professor. While there, he was deeply involved in sponsored research and consulted with HydroQual, Inc. In 1994, he joined HydroQual as partner. In 1998, he founded QEA. John has published more than thirty papers, given over twenty invited talks and over twenty-five presentations at national conferences. He has served on several doctoral committees and on technical advisory boards for industry and USEPA.

Mark Dortch
U.S. Army Corps of Engineers

Mark Dortch received his Ph.D. from Colorado State University in 1990. He has worked at ERDC/WES since 1972. Dr. Dortch spent 11 years working on physical hydraulic models and computation hydraulics in the Hydraulics Laboratory. He has been in the ERDC/WES Environmental Laboratory since 1983, where is Chief, Water Quality and Contaminant Modeling Branch. In this position, Dr. Dortch oversees the development, maintenance, and application of water quality and contaminant fate/transport models. This includes models for surface water, groundwater, watershed runoff, eutrophication, aquatic ecological population models, and human and ecological health impacts/risk assessment associated with multimedia exposure to chemicals. He has lead the development of new simulators for the DoD Groundwater Modeling System for evaluating innovative in-situ remediation technologies and development of the Army Risk Assessment Modeling System. Dr. Dortch has served as co-investigator on numerous site - specific water quality model studies, such as Chesapeake Bay, Florida Bay, New York Bight, San Juan Bay, and Lower Green Bay. His expertise includes: water quality modeling of surface water; transport processes and numerical modeling of transport; linkage of hydrodynamic and water quality models; contaminant fate/transport modeling; wetland water quality treat; and human and ecological risk assessment associated with exposure to chemicals.

Doug Endicott
Great Lakes Environmental Center

Doug Endicott has a strong background in environmental engineering, with an emphasis on water quality, bioaccumulation, and aquatic ecosystem modeling. He possesses 18 years of experience in designing, conducting, and synthesizing multi-disciplinary studies, as team leader, member, and consultant. Mr. Endicott has familiarity with development and application of mathematical models for many studies involving transport, fate, and bioaccumulation processes. He has led a team of engineers, scientists, and computer programmers, in conduct of problem oriented modeling studies for the Great Lakes. He has been responsible for study design and project management. Mr. Endicott has participated in the development and application of mathematical models (hydrodynamic and sediment transport; eutrophication; chemical partitioning, transformation, and fate; and food web bioaccumulation) for the Great Lakes and their associated tributaries and embayments. He has expertise in model calibration, verification, and uncertainty analysis procedures; point and non-point source, tributary and atmospheric load estimation; field and laboratory data analysis and reduction procedures; and presentation of results to scientific, technical, and managerial audiences. He was project manager of model development for Lake Michigan Mass Balance Project while working for USEPA. Other projects that he has completed: Green Bay/Fox River Mass Balance Study; USEPA/NOAA study of Zebra Mussel dynamics in Saginaw Bay; Assessment and Remediation of Contaminated Sediments (ARCS) project; Niagara River/Lake Ontario Toxics Management Plan; Lake Ontario TCDD Bioaccumulation Study.

Joseph Z. Gailani
U.S. Army Corps of Engineers

Joe Gailani is a Research Hydraulic Engineer at the USACE Engineer Research and Development Center. He received his Ph.D. from UCSB in 1991. Dr. Gailani has expertise in a range of areas involving sediment transport, including: cohesive and mixed sediment transport modeling; noncohesive sediment transport modeling; sediment-water interface processes; fate of dredged material; linkage of sediment transport and water quality models; and hydrodynamic and sediment data analysis. He has developed methods and tools to analyze and predict the transport of cohesive and noncohesive sediments that are in-place or will be placed as part of maintenance dredging. Dr. Gailani has developed tools to predict the effects of individual storms and longterm placement on in-place contaminated sediments and proposed capping materials in nearshore regions and long-shore and cross-shore sediment across the beach profile. Efforts include the development of field data collection plans for model calibration and verification; collection of field data; development of laboratory data collection efforts; analysis and reduction of laboratory and field data; calibration and verification of physics-based and engineering-based models to stimulate transport. He has been involved in measurement, data analysis, and modeling of longshore and cross-shore sand transport during storms. Dr. Gailani has brought new capabilities to USACE Coastal and Hydraulics Laboratory to measure cohesive sediment erosion under high-energy conditions. He lectures each year at the Texas A&M University Dredging short course.

Earl Hayter
U.S. Environmental Protection Agency

Earl J. Hayter, Ph.D., is a Research Environmental Engineer with the U.S. Environmental Protection Agency (USEPA), Office of Research and Development, National Exposure Research Laboratory, Ecosystems Research Division in Athens, Georgia. He is conducting research on morphological modeling in streams and rivers and on modeling the fate and transport of contaminated sediments in surface waters. Prior to his employment with USEPA in 1999, he was an Associate Professor in the Civil Engineering Department at Clemson University, South Carolina.

Richard A. Jepsen
Sandia National Laboratories

Rich Jepsen is a Senior Member of the Technical Staff at Sandia National Laboratories. He received his Ph.D. from UCSB in 1995. Dr. Jepsen conducts research for USDOE, USACE, and USEPA on surface water hydrology, sediment transport, and non-steady turbulent flow visualization and modeling. He performs both program and project management on several contracts for Work for Others (WFO) customers. Dr. Jepsen has developed and established active research program and unique capabilities in soil and sediment transport at Sandia. Additional research he has conducted includes well monitoring and geotechnical monitoring for the Waste Isolation Pilot Plant operated by USDOE.

Wilbert Lick
University of California, Santa Barbara

Wilbert Lick is a Professor in the Department of Mechanical and Environmental Engineering at UCSB. Prior to joining UCSB, he taught at Harvard University and Case Western Reserve University, with visiting appointments at Caltech and Imperial College, University of London. He received his Ph.D. from Rensselaer Polytechnic Institute. His main expertise is in fluid mechanics, numerical methods, mathematical modeling, and the environmental sciences. His present interests are in understanding and predicting the transport and fate of contaminants in surface and ground waters and the effects of these processes on water quality. Dr. Lick's work involves laboratory experiments and numerical modeling combined with field work for testing devices and data verification. More specifically, he and his students are presently working on: (a) sorption of organic chemicals to suspended solids as well as consolidated soils and sediments; (b) flocculation of fine-grained sediments and colloidal particles in water; (c) transport by convection and diffusion of radionuclides in liquid and vapor form in porous media; (d) availability of contaminants to organisms; (e) measurement of erosion rates and properties of reconstructed and undisturbed sediments using Sedflume; and (f) numerical modeling of currents and the transport and fate of sediments and contaminants in ground and surface waters. He is the author of over 100 peer-reviewed articles and is a consultant to federal and state agencies, as well as private companies.

James Martin
Mississippi State University

James L. Martin, Ph.D., P.E., has over 20 years of experience in conducting and managing water quality modeling projects. Previously, he conducted studies while a Research Civil Engineer with the Water Quality and Contaminant Modeling Branch with the U.S. Army Corps of Engineers Waterways Experiment Station (WES), while Vice President and Director of Engineering with AScI Corporation, and while a Research Environmental Scientist with the U.S. Environmental Protection Agency at its Large Lakes Research Station. For five years he provided contract support to the USEPA Center for Exposure Assessment Modeling through model development, providing technical assistance to the USEPA, state and local agencies, and through model application. He has authored/co-authored over 50 technical reports and publications, including USEPA guidance documents and model-user documentation. He has been involved in the development of a number of hydrodynamic and water quality models in common usage and is senior author of the textbook *Hydrodynamics and Transport for Water Quality Modeling*. He is presently a Professor and Kelly Gene Cook, Sr. Chair in the Department of Civil Engineering, Mississippi State University.

Ashish J. Mehta
University of Florida

Ashish Mehta is Professor of Coastal and Oceanographic Engineering at the University of Florida, where he has been teaching since 1976. He received his Ph.D. from University of Florida in 1973. His areas of specialization include coastal and estuarine hydrodynamics and sediment transport. Dr. Mehta is a leading expert in cohesive sediment transport processes and his experience includes laboratory and field studies, theoretical analysis, and modeling. He has co-authored numerous journal articles. In addition, he was awarded the Hans Albert Einstein Award by ASCE in 2000.

Rob Nairn
Baird & Associates

Rob Nairn is a Principal with Baird & Associates and the manager of the Toronto area office. He received his Ph.D. in Coastal and River Engineering from Imperial College of Science, Technology and Medicine in London, England. Dr. Nairn is an internationally recognized expert in the transport of both cohesive and non-cohesive sediments in rivers, estuaries, lakes and the sea and the related morphodynamic response. He acted as the hydrodynamic and sediment transport modeling and process expert on the EPA Peer Review of the Revised Baseline Modeling Report for the Hudson River PCBs RI/FS. Dr. Nairn was one of a panel of eight experts that wrote the recently released "*PCBs in the Upper Hudson River: The Science Behind the Controversy*" a report sponsored by the Hudson River Foundation. He has extensive experience in the implementation and interpretation of field data collection, laboratory experiments and numerical models related to the transport of sediments in rivers including the Fox River and Sheboygan River Superfund sites in Wisconsin. Over the last three years he has managed many other projects to assess watershed and river sediment transport and fluvial geomorphic response including Nemadji River in Minnesota; Saginaw River, Michigan; Muskegon River, Michigan, Rio Loco, Puerto Rico; Choc River, St. Lucia; and the Baram River in Malaysia. Dr. Nairn also has extensive experience in dredging projects and the assessment of dredging impacts (including plume modeling) and has recently completed or is actively working on related projects for the Department of Fisheries and Oceans in Canada and the Minerals Management Service of the US Department of the Interior.

Trimbak Parchure
U.S. Army Corps of Engineers

Trimbak Parchure is a Research Hydraulic Engineer at the Engineer Research and Development Center. He received his Ph.D. from University of Florida in 1984. Dr. Parchure has worked for the last 38 years on hydraulic aspects of real-life problems in civil engineering, coastal engineering, and environmental engineering. His work has included transport of cohesive and non-cohesive sediments, field data collection and analysis, disposal of wastes, tracer studies, design of coastal structures, port development, pollutant transport, design of navigation channels, dredging problems, hydraulic design of cooling water intakes and hot water outfalls for thermal and nuclear power stations, and general environmental studies. In all, Dr. Parchure has worked on more than 70 different projects in USA, Canada, Malaysia, Singapore and India and has conducted 31 field studies. In total, 140 multi-disciplinary technical reports on specific projects have been authored (90) / co-authored (50) by Dr. Parchure based on work done in India, Canada, Indonesia and USA. He has published 21 journal and 15 conference papers. Dr. Parchure received ASCE Hydraulics Division's Best Technical Note Award in 1993. He has published 8 WES reports over the past nine years. Dr. Parchure has reviewed numerous journal papers, reports and technical research proposals, and attended several national and international conferences and workshops and presented papers.

Danny Reible
Louisiana State University

Danny Reible is the Chevron Endowed Professor in the Department of Chemical Engineering at LSU. He received his Ph.D. from Caltech in 1982. Dr. Reible's research interests focus on transport phenomena and its applications to environmental mechanics. The primary motivation for this work is the determination of the fate and transport behavior of environmental contaminants. The work sees application through the USEPA South/Southwest Hazardous Substance Research Center, a university consortium composed of LSU, Rice University and Georgia Tech, which is directed by Dr. Reible. The environmental media of primary concern to the Center are contaminated sediments and dredged materials. Among the processes under study are bioturbation, the contaminant migration associated with the normal life-cycle activities of sediment-dwelling organisms, evaporation of volatile contaminants from dredged material, and facilitated sorption and transport associated with the presence of colloidal organic carbon in sediment pore-waters. In cooperation with the University of Sydney, research is also underway examining the competitive balance between bioturbation, which tends to oxidize and mobilize contaminants, and microbial activity which tends to eliminate and, in some cases, immobilize contaminants. There are active projects investigating sediment remediation including both removal and nonremoval options such as capping. Airborne contaminants released from sediments and elsewhere along coastlines are generally influenced by the complex coastal meteorology and the land-sea breeze cycle. Dr. Reible supervises an active research program in fluid mechanics and contaminant transport associated with the land-sea breeze. Methods range from laboratory simulations of density currents in water to state of the art models of turbulence employing high order closure techniques. Dr. Reible also leads projects in the remediation of soils containing oily liquids and other contaminants. This work is focused on defining the form and distribution of the oily phase residual and the development of models to describe mass transfer processes, e.g., during remediation.

Damian Shea
North Carolina State University

Damian Shea received his Ph.D. in Environmental Chemistry from the University of Maryland in 1985, focusing on trace metal behavior at the sediment-water interface. He continued to study these processes in the Chesapeake Bay when he was awarded a National Research Council PostDoctoral Fellowship. While serving at USEPA under an AAAS Environmental Science and Engineering Fellowship, he helped to develop the theoretical basis for sediment quality guidelines using the equilibrium partitioning approach. Dr. Shea spent the next six years at Battelle's Ocean Sciences Laboratory where he served as a Senior Research Scientist and Program Manager conducting applied research and monitoring for USEPA, USACE, MMS and other government and industrial clients. In 1993, he joined the faculty at NC State University where he is currently Professor and Head of the Department of Environmental and Molecular Toxicology. His research interests continue to be in the area of contaminant transport and fate processes, with a focus on the sediment-water interface. He is the author of over 100 publications and has served on numerous US-government sponsored workshops and peer-review panels.

Lawson Smith
U.S. Army Corp of Engineers

Lawson Smith is a senior Research Geologist in the Earthquake Engineering and Geosciences Division, Geotechnical and Structures Laboratory, U.S. Army Engineer Research and Development Center in Vicksburg, MS. He obtained the B.S. from Mississippi State University (1975), M.S. from the University Southern Mississippi (1977), and the Ph.D. from the University of Illinois, Urbana-Champaign, in 1983. At WES, he has held the positions of Geologist (1979-1983); Supervisory Geologist and Chief, Regional Geologic Studies Unit (1983-1986); Supervisory Geologist and Chief, Engineering Geology Group (1986-1991), Research Geologist (1991-1993), and senior Research Geologist (1993-present). Dr. Smith's research at WES has principally focused on the application of concepts and methods in geomorphology to the solution of a variety of problems in civil works, military engineering, and natural resources management. Major focus areas have been the application of geomorphology to river engineering, wetland restoration and management, installation restoration, natural hazards identification and mitigation, cultural resources management, and ecological restoration. He has written papers and book chapters on the fluvial geomorphology of rivers, reservoirs, lakes, and deltas, the sedimentology of fluvial, deltaic, and alluvial fan systems, and the response of rivers to river engineering actions.

Allen Teeter
U.S. Army Corps of Engineers

Allen Teeter is a senior researcher in the WES Coastal and Hydraulics Laboratory. Mr. Teeter is responsible for developing general plans for sediment, transport, and hydrodynamic studies based on pertinent technical literature; his own professional knowledge, experience, and judgment; and consultants and other specialists in related fields. He initiates and executes detailed plans for execution of assignments to completion of study. The current Laguna Madre dredged material dispersion study is assessing year-long water quality and underwater light impacts from side-of-channel dredged material disposal. Computer algorithms for multiple-grain class erosion and deposition, and for wind-wave shear stress in ultra-shallow, vegetated lagoons systems have been developed for incorporation in the TABS-MDS modeling system that is being used for this study. Mr. Teeter was a Technical Area Manager of the WES Dredged Material Research Program (DRP) and was principal investigator on two component studies. One study refined and developed sediment transport algorithms for fine, cohesive

sediment, and incorporated them into a simple point model called COSED. In the other DRP study, towed devices for surveying channels where fluid mud or fluff obscures the true bottom from acoustic survey methods were developed.

Harold R. Wanless
University of Miami

Harold R. Wanless received his Ph.D. from Johns Hopkins University in 1973. He is Professor and Departmental Chair in the Department of Geological Sciences at the University of Miami. His research interests cover a range of activities in sedimentology, coastal geology and environmental geology. Dr. Wanless has an active research program, funded by the National Park Service, the National Biological Survey, and NOAA, to document hurricane effects on coastal environments. Funded research also involves studying the Holocene and historical evolution of mangrove coastal wetlands and anthropogenic effects on coastal and shallow marine environments.

C. Kirk Ziegler
Quantitative Environmental Analysis, LLC

C. Kirk Ziegler, Ph.D. is vice president of QEA and manager of the hydrodynamic and sediment transport programs. He received his Ph.D. from University of California, Santa Barbara in 1986 and after working as a research engineer at UCSB for four years, he joined HydroQual, Inc. where he worked until the formation of QEA in 1998. His expertise is in the area of contaminant fate and transport with an emphasis on sediment transport. He has developed a state-of-the-science sediment transport model that is of importance in the study of waterborne pollutants in lakes, rivers and coastal waters. Development of the sediment transport model was funded by USEPA and the model has been used by USEPA on several contaminated sediment studies. He has developed, calibrated and applied one-, two-, and three-dimensional models (hydrodynamic, sediment transport, and toxics fate and transport) to aquatic systems ranging from small streams to large rivers, impoundments, bays and coastal waters. Associated with the modeling work, Kirk has also designed and conducted field studies to meet the requirements of the modeling efforts. Kirk has directed over twenty major sediment transport studies. He has published more than fifteen papers and made numerous presentations at national conferences. He has also served as a reviewer for several technical journals covering hydrodynamic and sediment transport issues. Kirk is currently a member of the ASCE Task Committee on Effects of Energy Production on Reservoir Water Quality.

**For Release:
10/12/01**

REGISTRATION FORM

Sediment Stability Workshop
USEPA/USACE/US NAVY/S-SW HSRC/SMWG
January 22, 23 and 24, 2002
Chateau Sonesta
800 Iberville Street
New Orleans, Louisiana 70112
(504) 586-0800

Name: _____

Affiliation: _____

Address: _____

City, State, Zip: _____

Telephone: _____

Fax: _____

E-mail Address: _____

Registration Fee: \$150 U.S. Please make your check payable to the "Sediment Management Work Group." Registration and the fee should be mailed to the Sediment Management Work Group, c/o HMSC, 2290 First National Building, 660 Woodward Ave., Detroit, MI 48226-3583.

Registration Deadline: **January 4, 2002.** (Late registrations will be accepted after January 10, with a late fee of \$25.00, if space is still available.)

Early Registration can be faxed to: (313) 465-7493 or e-mailed to SNadeau@honigman.com to hold your place provided the Registration Fee is received by January 4th.

Room Reservations: Call the Hotel at (504) 586-0800 and mention the "Sediment Stability Workshop" **before January 4, 2001** to obtain the discounted room rate. Please note that a very large conference also is taking place the week of the Workshop and hotel rooms will be difficult to find and expensive. Early reservations are recommended.

Cancellation Policy: A full refund of the Registration Fee will be provided if notice of cancellation is received by January 14, 2002. Room cancellation is based on the Hotel's policy, which requires 72 hours advance notice in order to avoid forfeiture of one night's payment.

For additional information contact: Susan Vasich (313) 465-7978 or smv@honigman.com.